

Reflections on the management of genetic resources in areas beyond national jurisdiction

The question of the management of genetic resources¹ in areas beyond national jurisdiction has been raised in a number of international processes, including the Convention on Biological Diversity (CBD) and the UN General Assembly.

Its political relevance is expected to rise in the next months in these two parallel frameworks.

1. Scope and purpose of the working paper

The forthcoming discussions at international level pertaining to biodiversity outside national jurisdiction will probably encompass both *conservation and sustainable use* of marine biodiversity and *management of genetic resources*.

The European Community has defined a clear position on the *conservation and sustainable use* of marine biodiversity in areas beyond national jurisdiction, which was spelt out in a UN ad hoc meeting on this issue in February 2006². It calls for the elaboration of an implementing agreement under the United Nations Convention for the Law of the Sea (UNCLOS); such agreement would make it possible to set up marine protected areas covering all human activities in the high seas, via the establishment of a cooperation mechanism between existing international instruments which only cover sectoral activities³.

The *conservation and sustainable use* of marine biodiversity, including genetic resources, in areas beyond national jurisdiction will therefore not be addressed in the present working paper.

The present working paper focuses on the issue of the *management* of genetic resources in areas beyond national jurisdiction, and in particular on questions relating to access to, and sharing of benefits arising out of, those resources. The European Community only started recently to reflect on this question, and has not decided on a definitive position. At the UN ad hoc meeting on the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction, the European Community expressed its

¹ Genetic resources are defined as “*genetic material of actual or potential value*”, with genetic material meaning “*any material of plant, animal, microbial or other origin containing functional units of heredity*” (Article 2 of the CBD)

² Ad Hoc Open-ended Informal Working group on the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction

³ The working paper established by the subgroup 3 of the Interservice group on Maritime affairs n°XX (to be precised when accompanying documents to the Green Paper are made public) contains a more detailed presentation of this process.

readiness to “take part in active discussion about the management of genetic resources in areas beyond national jurisdiction by the international community”⁴.

The purpose of the present working paper is, through reflecting on the issues at stake, to facilitate consultations among all stakeholders which may have an interest in the debate, with a view to gathering elements for the definition of an EU position on the management of genetic resources in areas beyond national jurisdiction.

2. Genetic resources in marine areas beyond national jurisdiction: recently discovered biological richness and considerable commercial prospects

The richness and potential benefits of genetic resources in the high seas and the international seabed (referred to as “areas beyond national jurisdiction”) have been discovered in the last decades. Once seen as relatively poor ecosystems, some of those areas have proven to contain an immensely rich and diverse biodiversity. Hydrothermal vents, sea mounts and other deep sea ecosystems are progressively being identified as source of an intense marine life, which was and, to a large extent, remains unknown.

Not only do these ecosystems present rich and unique features, but they also offer considerable prospects for commercial exploitation. This is in particular the case for the genetic resources present in those ecosystems.

Bio prospecting activities have been carried out for some years, with a view to collecting, processing and exploiting commercially genetic resources from the international seabed. They involve considerable costs and have therefore mainly been run by important firms, ready to invest high amounts of funds, and often in combination with research institutes. Financial benefits derived from the commercial use of marine genetic resources are deemed to be of great importance⁵. Within the biotechnology industry, the pharmaceutical and food sectors seem to be the most involved in bio prospecting.

3. The management of genetic resources in areas beyond national jurisdiction is not clearly covered by the existing international framework

Neither the United Convention on the Law of the Sea (UNCLOS) nor the CBD provide a clear and comprehensive framework for the regulation of the management of genetic resources in areas beyond national jurisdiction, and in particular for the access and benefit sharing of those resources.

⁴ Statement from the Austrian Presidency on behalf of the European Union at the UN ad hoc meeting on the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction on 13th February 2006

⁵ According to a study by the United Nations University “Bio prospecting of genetic resources in the deep seabed: scientific, legal and policy aspects” (2005), “*estimates put worldwide sales of marine biotechnology-related products at 100 billion US \$*”

3.1. The United Convention on the Law of the Sea (UNCLOS) does not address the specific questions raised by the management of genetic resources

UNCLOS addresses the protection and exploitation of marine ecosystems on the high seas and in the international seabed. It does not however properly cover genetic resources.

3.1.1. In the high seas, UNCLOS provides for a set of rules and principles designed to apply to conservation and management of “living resources”⁶.

While “living resources” comprise genetic resources, this concept was primarily designed to encompass fisheries resources and mammals, as can be deduced from Article 119 of UNCLOS, which sets out the obligations of parties on conservation of living resources of the high seas, and refers to the classic tools for fisheries conservation policy.

Moreover, measures for management and conservation of fisheries resources in the high seas have been completed by the New York Agreement on straddling and highly migratory stocks, implementing the rather general provisions of UNCLOS on the management and conservation of high seas living resources. There has not been any agreement of this kind applying to genetic resources.

3.1.2. Some third countries claim that genetic resources in areas beyond national jurisdiction should be considered within the framework applicable to the “Area”. The “Area” is defined by UNCLOS as “the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction”⁷.

The regime of the Area is governed according to Part XI of UNCLOS⁸. However, the resources of the Area are defined as “mineral resources”, and therefore exclude genetic resources. The regime for exploitation and benefit sharing of those *mineral* resources, considered as common heritage of mankind, is detailed in Section 3 of Part XI of UNCLOS.

Within the EU, the general interpretation of these provisions is that, for the Area, genetic resources do not benefit from the statute of “common heritage of mankind”. They would therefore not be subject to the management regime foreseen in Part XI of UNCLOS (and notably to its section 3), which vests the International Sea Bed Authority (ISBA) with the exclusive competence of authorizing and managing activities linked to mineral resources, for the benefit of mankind, and according to a well developed system of benefit sharing favouring developing countries.

It may however be worth considering that the 6th recital of UNCLOS, when referring to the concept of benefit sharing for resources of the Area, makes a general reference to the General Assembly resolution 2749 (XXV) of 17 December 1970, the scope of which is not restricted to mineral resources.

⁶ Cf. Section 2 of Part VII of UNCLOS (Article 116 to 120)

⁷ Article 1 of UNCLOS

⁸ Article 134 of UNCLOS

In addition to the fact that the regime of Area is primarily, if not exclusively, designed to regulate mineral resources, another element pleading against the inclusion of genetic resources in the scope of the regime of the Area is that those resources are not all located on the seabed. Recent sampling of oceans waters has indeed revealed a surprising wealth of previously unknown species and genes.

3.1.3. UNCLOS also contains provisions⁹ on the promotion, international cooperation and transfer of knowledge in the field of marine research and technology. They set the general principle of freedom of marine scientific research¹⁰, including in the Area¹¹. This argument might be upheld as a reason to maintain the ‘status quo’ in relation to genetic resources and to allow free access to them.

UNCLOS regulates “marine scientific research” without however defining this term. It is therefore not clear whether the freedom of marine research is limited to fundamental research or could also be extended to applied research linked to commercial activities (including what is often called bio prospecting).

In addition, it is stated that marine scientific research within the Area must be carried out “for the benefit of mankind as a whole, in accordance with Part XIII”¹², but the issue of possible sharing of the benefits arising from such research is not addressed.

Thus the provisions relating to marine scientific research do not provide precise indications how to address the legal status of activities involving genetic resources in areas beyond national jurisdiction.

It can be assumed that UNCLOS does not cover the specificities of the management of genetic resources of the deep seabed, which were simply not conceivable when the Convention was negotiated.

3.2. The system established under the Convention for the Biological Diversity is primarily designed to regulate the use of genetic resources in areas under national jurisdiction

One of main objectives of the Convention for the Biological Diversity is the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources. The scope and logic of the CBD are mainly oriented to the legal status of biodiversity in areas within national jurisdiction.

The CBD itself foresees that its provisions should be applied with respect to the marine environment consistently with the rights and obligations of States under the law of the sea¹³. This clause limits the scope of the Convention, which could not be applied in such a way as to restrict the rights of States over the exploitation of resources in areas beyond

⁹ cf. Part XIII and XIV of UNCLOS

¹⁰ Article 238

¹¹ Article 256

¹² Article 143

¹³ Article 22(2) of the Convention for the Biological Diversity

national jurisdiction, if this was in contradiction with provisions of UNCLOS in this field. However, the fact that UNCLOS does not contain specific provisions on the legal status of such resources leaves the question open of what could be addressed in the context of CBD.

The jurisdictional scope of the CBD is defined in its Article 4 as covering (1) components of biological diversity in areas within the limit of national jurisdiction of State parties, as well as (2) processes and activities carried out under the jurisdiction or control of State parties, within or *beyond* the limits of national jurisdiction.

Discussions are under way within CBD to fulfil the requirements of Article 15(7), which calls for sharing the benefits of the commercial and other uses of genetic resources. The mere application of a potential CBD regime to management of genetic resources in the high seas or international seabed would however be challenging. This is mainly because, as originally designed under the main text of CBD, any regime of access and benefit sharing under CBD would create rights and obligations between State parties, which are conceived to be organised bilaterally: the principle is that the country in which jurisdiction genetic resources are located would benefit from the use made by firms from a third country collecting those resources. Such a system is not adapted to the management of genetic resources in areas beyond national jurisdiction.

Finally, expecting State parties to regulate by themselves processes and activities carried out under their control but outside national jurisdiction would present the risk that diverging rules on similar issues are eventually adopted, fragmenting the framework applicable to genetic resources beyond national jurisdiction and impeding their sustainable management.

4. The collection and exploitation of genetic resources are currently one of the few activities occurring in areas beyond national jurisdiction which remain unregulated

4.1. As a result of the lack of clear statute for genetic resources in areas beyond national jurisdiction deriving either from UNCLOS or from the CBD, the collection and exploitation of genetic resources in areas beyond national jurisdiction have been taking place up to now in the absence of a clear international agreed legal framework. Both research institutes and bioprospecting firms carry out their activities according to the first come first served basis.

The only applicable instruments seem to be the conventions on intellectual property rights (WIPO or TRIPS within the WTO), which allow for patents to be taken out on genetic resources collected from the seabed and high seas or on processes derived from such resources. This entitles the patents' holder to claim exclusive rights on the commercial exploitation of inventions based on such resources or processes, and receive royalties from other firms wishing to make use of them.

This situation comes as a clear contrast to other human activities occurring on the high seas, like fishing, shipping or mining, which are all subject to a set of international rules, including their impact on the environment.

4.2. Moreover, bioprospecting activities taking place in the continental shelf or EEZ of a State are covered by the on going discussions in the CBD framework¹⁴, which pertain to the setting up of an increasingly sophisticated regime of access and benefit sharing. In view of the current state of the debate within the CBD on this issue, it is unlikely that it will cover similar bio prospecting activities occurring beyond the EEZ or continental shelf. The areas beyond national jurisdiction would then be the only places where collection and commercial exploitation of genetic resources are not governed by any rule.

4.3. There is growing awareness at international level that this gap should be filled. As the economic sectors related to such resources develop, there can be legitimate concerns of whether it is acceptable to continue to operate in this climate of legal uncertainty, together with increased risks of environmental impact.

This point is on the agenda of various International Organisations, more particularly within the UN process dealing with Law of the Sea and in the framework of the Convention for biological diversity (CBD). Other fora and organisations to which the Community also participates, acting either on the basis of mixed or exclusive competence (FAO, WTO and World Intellectual Property Organisation (WIPO)) may also address this topic. International decisions adopted in those frameworks may impact several EC policies (environment, research, intellectual property rights, trade, fishery).

4.4. The EU needs to develop a position on whether to keep the status quo or to elaborate a regime governing the management of genetic resources in areas beyond national jurisdiction, and in particular the question of access and benefit-sharing. As regards the later, but also generally, any regulatory regime needs to ensure that economic operators have high incentives to invest into growth of the activities in question, in order to realize employment potentials but also innovation in the interest of mankind.

5. Principles and interests to take into account

We should reflect on the management of genetic resources in areas beyond national jurisdiction, taking into account, among others, the following various interests and principles:

- access to genetic resources for EU research institutes and firms;
- industry should have sufficient incentives to invest in growth of activities related to marine genetic resources, thus realising the potential for growth and employment in this exciting sector;
- supporting progress of research activities;
- promoting an ambitious EU policy for a better governance of ocean affairs;
- promoting consistency in the management of all marine resources from the high seas, and in particular reflecting on the opportunity to put in place an equitable benefit-sharing system;

¹⁴ Cf. decision VIII/4 of the 8th Conference of Parties of the CBD held in March 2006

- Effective protection and conservation of genetic biodiversity, and limiting the negative environmental impact of any activities related to their exploitation;
- Coherence between different international regimes and organisations.

The opportunity to consider separately *access* to genetic resources in areas beyond national jurisdiction on the one hand, and the *sharing of benefits* arising out of their utilisation on the other hand, could also be explored.

6. Reflections on possible approaches to the management of genetic resources beyond national jurisdiction

While the protection of genetic resources could be attained via the global approach under discussion for protection of marine biodiversity, it seems that regulating the access and use of those resources would preferably require a specific initiative at international level.

Changes to the current state of play could take different forms. ,which are briefly presented below.

6.1. Action in the framework of the CBD

This would require agreeing on a broad interpretation of its scope via some sort of guidelines, a decision or even a new Protocol adopted by the Parties to the Convention.

The logic behind it would be that this is the forum which has the most expertise in organising access and benefit sharing of genetic resources worldwide and that the principles valid in areas subject to national jurisdiction should also prevail outside those territories. The difficulty would be however to adapt a system which is mainly designed to apply between States to a situation where the genetic resources are located outside any jurisdiction; the sharing of the benefits arising from the exploitation of the resources concerned would therefore have to be organised according to rules specific to that situation. Notably, this would require setting up an independent body vested with authority over genetic resources outside national jurisdiction, or empowering an existing body (such as the International Sea Bed Authority). Such an authority would issue authorizations for access and exploitation of genetic resources, possibly against the payment of fees. The income derived from the commercialisation of the resources or processes derived from those resources by the firms concerned could also be subject to a levy, which would benefit third parties, for example developing countries or research institutes.

The provisions on access and benefit sharing contained in the FAO International Treaty on Plant Genetic Resources for Food and Agriculture, and the process under development in that framework, could be worth of consideration, in so far as this system departs from a logic based on bilateral negotiation between providers and recipients but should rely on an agreement to be accepted by all parties.

6.2. Application to genetic resources of the regime governing the management of mineral resources under UNCLOS

Another approach, which is likely to be favoured by some developing States, would be to amend or interpret UNCLOS so that genetic resources are considered as common heritage of mankind and be assimilated to mineral resources from the Area. The sharing of benefits from their exploitation would be governed according to the same principles as foreseen in Part XI of UNCLOS, to be adapted the specific features of exploitation of genetic resources. This solution would ensure that resources from the international seabed are considered in a consistent manner, be they mineral or genetic, and provide for a comprehensive regime for their management. However, one should bear in mind that the current system for the management of the Area by the International Sea Bed Authority (ISBA) has not really been tested in practice so far. This option should also not lead to a reopening of the debate on the regime of the Area, which proved to be one of the most complex questions in the context of the adoption of UNCLOS.

A possibility to overcome this difficulty could be the adoption of a Protocol or of an Implementing Agreement.

6.3. Regional approaches

Other options include the adoption of regional conventions, covering different areas beyond national jurisdiction. On the model of Regional Fisheries organisations or regional seas conventions, rules would be adopted for the management of genetic resources in given areas by States interested in their exploitation. Benefits arising from the exploitation could be shared among the parties of the convention, according to allocation keys which they would define by themselves. The membership should in no case be reserved to the regional coastal states. The advantage would be to involve in the management of precise areas those States with an interest in the resources considered and create incentives for their sustainable use. The difficulties resulting from this choice would however be the fragmentation of the various regional solutions defined, and the risk that genetic resources around the world are not covered according to a similar degree of protection of various interests.

Regional approaches might be useful test-ground to address important elements such as environmental impact assessment related to the relevant activities but they can hardly deliver in relation to the expectations of developing countries on benefit sharing for the benefit of mankind (which remains an important driver of the negotiating process)¹⁵.

6.4. Maintaining the status quo for the exploitation of genetic resources beyond national jurisdiction while focusing on their protection

The option of keeping the current status quo could also be considered, in view of the advantages generated for EU firms and research bodies.

¹⁵ At least, they should include innovative voluntary linkages with ISBA (e.g. arrangement for payment of fees from operators under the jurisdiction or control of the Parties to the regional agreement).

This would be a coherent approach if genetic resources in areas beyond national jurisdiction were considered to be “res nullius”, or that bio prospecting is already adequately addressed by UNCLOS provisions on the freedom of marine scientific research. This approach could also rely on the idea that any measures pertaining to areas beyond national jurisdiction should focus on their protection (within the wider context of protection of biodiversity outside national jurisdiction). Any supplementary step, especially on benefit sharing, would not need to be addressed through a binding regime.

6.5. The relationships between those options and the statute of genetic resources pursuant to international conventions on Intellectual property rights should also be assessed, with a view to ensuring mutual consistency.

Patent protection is essential to ensure that economic operators get financial incentives in return of the high investments required to engage in bio-prospecting activities. At the same time, particular attention could be paid to the scope of intellectual properties rights, in order to avoid restricting access to genetic resources for research purpose (for example access to collection of materials and basic knowledge about the biosphere).

7. An International authority responsible for management of genetic resources beyond national jurisdiction?

The first step in the process on a possible regulation of the use of genetic resources beyond national jurisdiction is to define which kind of regime, if any, the EU favours. Were the EU to opt for the establishment of a new regime the second step would then be to reflect on possible avenues for the management of this regime. This note only presents three possible options.

7.1. In the case of the assimilation of genetic resources in areas beyond national jurisdiction to mineral resources within the meaning of Part XI of UNCLOS, the mandate of ISBA could accordingly be extended to genetic resources from the seabed, and it would be for this body to manage the regime applicable to those resources.

Even if genetic resources were not strictly subject to the regime of mineral resources from the seabed under Article XI of UNCLOS but to a sui generis management system, it could be envisaged to have the ISBA in charge of it.

The advantage of entrusting ISBA with such missions would be to avoid a fragmentation of international bodies, to benefit from its expertise and existing structure (secretariat and decision-making processes are already in place) and to increase the activities of a body which is currently underused.

7.2. Another option would be the setting up of an ad hoc body, which would be coherent if it was decided to establish an ad hoc management regime. Depending on the content of the regime, this could be assumed by an organ deriving from the CBD secretariat, or from the secretariat of other existing international institutions. The advantage of linking a new organ to existing organisations or processes would be to ensure consistency between their approaches and avoid a proliferation of organs in charge of interconnected matters.

7.3. If a regional approach were to be favoured, regional sea organisations could be entrusted with the task of managing the regime. One obstacle there seems to be that most of their current recommendations are not legally binding which would weaken the effectiveness of any agreed set of rules.

Another theoretical option would be to turn to Regional fisheries organisations. A major change in their mandate and expertise would then be required.